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News Summary

Articles on inside pages

Traditionally well-regarded universities remain high on the list in a new assessment of 522 doctoral programs in the humanities. Story and Fact-File on Pages 4-6.

Standardized testing could be dramatically changed in the next few years by the use of microcomputers. Story on Page 4.

After 18 months in office, George A. Keyworth, II, President Reagan's science adviser, is still a controversial figure among scientists. Story on Page 11.

Edward A. Knapp, a former administrator at Los Alamos National Laboratory, has been appointed director of the National Science Foundation. Story on Page 12.

Within three years, the University of Washington plans to eliminate 24 degree programs and reduce enrollment by about 5,000. Story on Page 3.

Sports medicine is no longer the exclusive province of physical-education majors. David L. Costill, director of the Human Performance Laboratory at Ball State University, is one of the leaders in the growing field. Stories on Page 15.

The conservative scholar Robert A. Nisbet airs his opinions in a new book, *Prejudices*, recently published by the Harvard University Press. Story on Page 21.

Dorothee Wilms, West Germany's new Minister for Education and Science, believes that country's government has been too generous with its financial aid for students. Story on Page 19.

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How Education and Science Leaders in Congress Fared at the Polls

The Winners

Sen. Hatch
R–Utah

Sen. Stafford
R–Vermont

Rep. Natcher
D–Kentucky

Rep. Perkins
D–Kentucky

Rep. Simon
D–Illinois

Rep. Walgren
D–Pennsylvania

Rep. Waxman
D–California

The Losers

Sen. Schmitt
R–New Mexico

Rep. Heckler
R–Massachusetts

Rep. Peyser
D–New York

Details on Pages 8 and 9

U.S. Backs Suit on TV Football by 2 Universities

Justice Dept. files brief in case challenging NCAA

DENVER

Two universities challenging the National Collegiate Athletic Association's right to control the televising of their regular-season football games received a big boost last week when the Justice Department filed a friend-of-the-court brief supporting their position in a federal court of appeals.

The University of Georgia and the University of Oklahoma have sued the N.C.A.A., charging that the association violates federal antitrust laws by insisting on exclusive control of televising college football and by threatening sanctions against institutions that question its control.

In September, U. S. District Court Judge Juan G. Burciaga ruled in favor of the universities and struck down three contracts totaling $281-million between the N.C.A.A. and television networks.

The N.C.A.A., arguing that controls are necessary to prevent chaos in the televising of college football, appealed that decision to the U. S. Court of Appeals for the Tenth Circuit here and obtained a temporary stay of the judge's order. A hearing is scheduled next week.

NCAA 'Clearly Restrains' Members

The restrictions that the N.C.A.A. imposes on its member institutions "were properly found to be an unreasonable restraint of trade" by the district judge, the Justice Department said in its brief.

Although the department said that Judge Burciaga had erred in ruling that the N.C.A.A.'s controls were a "*per se* violation" of the Sherman Antitrust Act, it argued that the evidence supported his other conclusions. "The challenged conduct of the N.C.A.A.," the government's brief said, "clearly restrains the freedom of N.C.A.A. members to negotiate independently for the sale of television rights to college football games."

The brief continued: "Plaintiffs have demonstrated that the N.C.A.A., comprised as it is of all the major college athletic competitors, has utilized the advantages con-

Continued on Page 18, Column 1

Decline in Faculty Morale Laid to Governance Role, Not Salary

Involvement in college planning deemed a major factor

By JACK MAGARRELL

The morale of college faculty members, which has declined in the last decade, seems to be "unrelated to changes in college income or average faculty salary," a national study has found.

Rather, the study found, it is the faculty members' involvement in planning and in the governance of their institutions that has the greatest effect on their morale, on their commitment to the purposes of the college, and on their support of its administration.

The 10-year study by the Institute of Higher Education at Columbia University's Teachers College took the financial pulse of 93 colleges and universities and weighed the opinions of more than 5,000 faculty members.

It set out to explore the relationships between college finances and faculty members' assessments of the institutions in the period roughly between 1970 and 1980.

Among other things, the faculty members said that:

▶ Innovation is rarer on today's campuses than it was a decade ago.

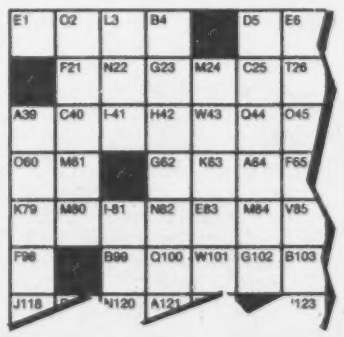
▶ When changes in curriculum are made, they are increasingly likely to be

Continued on Page 28, Column 1

An Acrostic Puzzle for Academe

If you can describe an "academic casualty" in 7 letters, a "gridiron bonus" in 8 letters, and a "cultural sign" in 14 letters (two words), you're well on your way to solving *The Chronicle Acrostic*—a new, monthly challenge to our readers.

The first Chronicle Acrostic appears on Page 26.



Morale

Continued from Page 1

based on financial considerations, rather than on educational merit.

▶ They feel less involved in the important decisions about running their institutions.

▶ Faculty morale is especially low at community colleges.

▶ Colleges give less consideration to the opinion of students in decisions affecting them.

▶ Presidents of private colleges and universities have a freer hand in dealing with personnel problems than do the heads of public institutions.

▶ Colleges are more sensitive to the needs of undergraduates and are making greater efforts to reach out to serve the needs of the surrounding community.

In summarizing the preliminary findings for *The Chronicle*, the director of the study, Richard E. Anderson, an associate professor of higher education at Columbia's Teachers College, said that in general the "effectiveness of the institutions has remained unchanged."

Although there have been "trouble spots," he said, the budgets of most institutions have kept pace with inflation and enrollment growth during the past 10 years.

Some colleges have managed during that period to become stronger though poorer, according to Mr. Anderson.

"Deprived institutions can thrive while the academic programs at colleges with growing budgets can deteriorate," he said. "Administrative style and leadership appear to be the significant factors."

The Institute of Higher Education used three kinds of data in the study:

▶ Financial and statistical profiles of each of the 93 institutions for every third year from 1968 thorough 1980, to provide a base for the 1970 and 1980 comparisons. All types were represented: public and private two-year and four-year institutions, liberal-arts colleges, and major research universities in all parts of the country.

▶ Assessments of faculty opinion at the 93 institutions, using standardized measurements developed by the Educational Testing Service to evaluate institutions on such items as concern for undergraduate learning, democratic governance, meeting local needs, concern for innovation, and institutional spirit. More than 5,100 faculty members returned the questionnaires in 1980-81. Their responses were compared with those of more than 6,900 faculty members at the same institutions who had answered the same questionnaires in the late 1960's and early 1970's.

▶ Interviews with administrators and faculty members at 13 institutions that seemed not to fit conventional patterns. Those institutions include some that suffered major budget cuts but appeared to be stronger at the end of the decade than at the beginning, and some that had less success despite growing enrollments and larger budgets.

The study was financed by the Lilly Endowment. A full report will be available from the Institute of Higher Education next spring.

In the first survey of faculty members, 61 per cent said their morale was high; in the latest survey, only 51 per cent held that view.

Mr. Anderson said faculty salaries at the 93 institutions had lost 20 per cent in purchasing power during the decade, sufficient cause for a drop in any group's spirits. But the study found that faculty morale was much more closely related to changes in governance and planning.

The proportion of faculty members who said their institution's system of governance involved the sharing of authority between administrators and faculty members declined from 64 per cent in 1970 to 44 per cent in 1980.

At institutions that received high ratings from the faculty members, administrators had involved the faculty in planning and decision making, Mr. Anderson said.

Those administrators were much more likely than their counterparts at other institutions to have made painful and unpopular decisions, he said, but the administrators at the more favorably rated institutions "paid almost excessive attention to the hiring, promotion, and termination" of faculty members.

Personnel Practices Differ

The study revealed some differences between administrators at public and private institutions in their approaches to personnel decisions.

Those at private colleges took pains to involve faculty members in solving college problems, he said, but they also were able to make unpopular decisions with fewer restraints than their colleagues at public institutions.

"Independent institutions were more likely to be seen as in jeopardy by their faculty members," Mr. Anderson said. "The presidents of these colleges therefore had a freer hand to make decisions in the interests of the college."

Faculty members at public colleges were more likely to perceive the financial problems of their institutions as a "failure" of the administration because it did not get a large enough appropriation, he said.

Presidents of public institutions used two approaches to acquire "leadership legitimacy," Mr. Anderson said.

One was to obtain special outside funds to distribute to faculty members as incentives, such as awards for travel and research.

The other was to appear to be especially successful in the politics of budgeting. "The perception that the president fought an extraordinarily good fight for the college," Mr. Anderson said, appears to have mattered more than whether the budget increased.

As an example of the connection between democratic governance and faculty morale, Mr. Anderson cited a community college that participated in the study. When its enrollment dropped 3 per cent, the governing board of the community-college system hired a chancellor to "straighten things out."

"In a zeal for efficiency, the chancellor unilaterally instituted minor budget cuts, program changes, and work rules," Mr. Anderson said. Among the last was a requirement that faculty members be in their offices or classrooms 25 hours a week.

Administration 'Lost Control'

"The faculty did not believe that the financial crisis was that severe, nor that the changes were reasonable," Mr. Anderson said. "They became alienated." Faculty morale plummeted, and professors who had been working 50 or 60 hours a week began working the prescribed 25.

"The administration, by trying to systematize and streamline management, had lost control of the faculty," Mr. Anderson said.

As a group, the 10 community colleges in the survey showed a dramatic decline in institutional spirit, concern for innovation, and democratic governance.

The proportion of community-college faculty members who agreed that faculty morale was high dropped from 65 per cent in 1970 to 41 per cent in 1980.

Mr. Anderson said evidence from the surveys and campus interviews suggested that faculty members at the public two-year institutions felt a loss of control.

"Presidents, system chancellors, and local politicians are more likely to be making the decisions," he said.

Mr. Anderson said the study showed that colleges and universities had increased—slightly but significantly—their attention to the education of undergraduates, were making substantially greater efforts to meet the needs of the communities around them, and were offering more remedial courses.

Those actions may be reflections of what Mr. Anderson called the "No. 1 concern"—enrollment.

"There is evidence that most of the institutions have been scrambling for students," he said.

Over the past decade, the survey found, the institutions in the survey accepted a larger proportion of the students who applied; a smaller proportion of those accepted actually enrolled; and the average test scores of those who enrolled declined by 6 per cent.

By 1980, the institutions surveyed were accepting 82 per cent of the applicants, compared with 74 per cent a decade earlier. The proportion of those accepted who actually enrolled declined from 61 per cent in 1970 to 55 per cent in 1980.

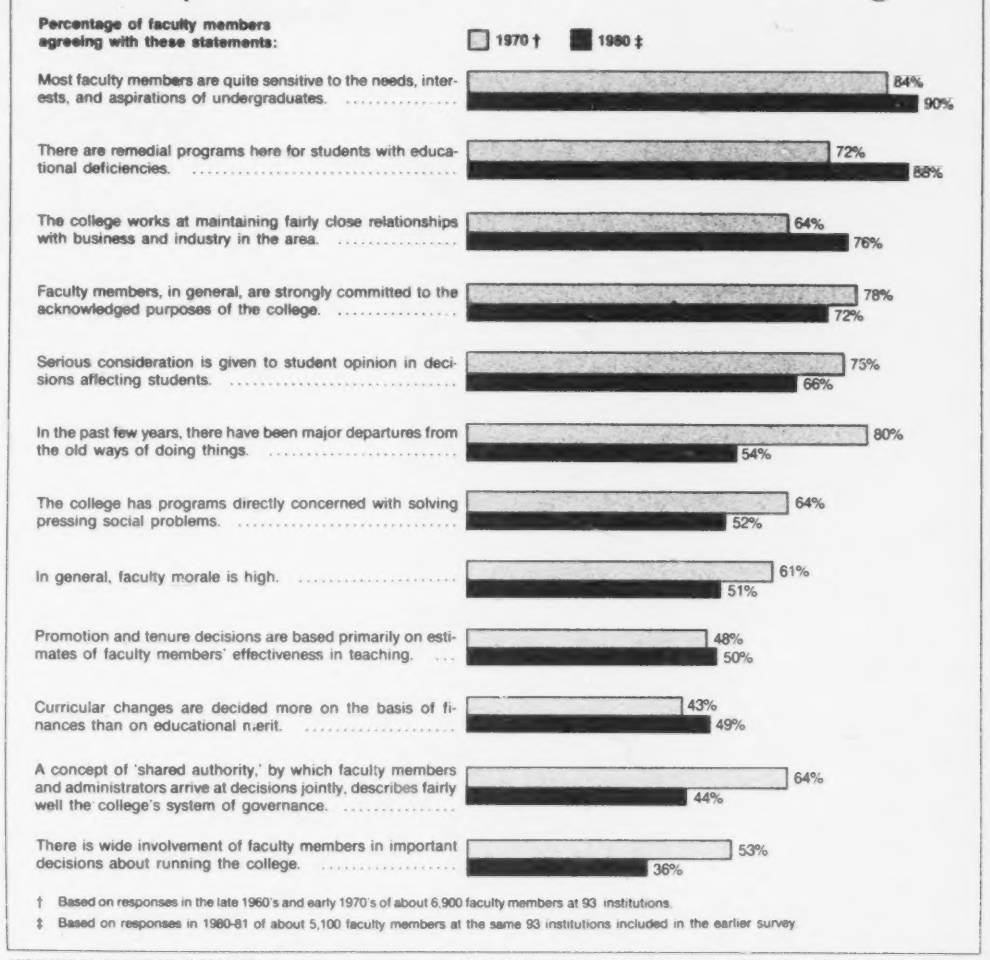
The tightening of budgets through the 1970's was accompanied by a decline in colleges' willingness to experiment, the study found. Ten years ago, when faculty members were asked if there had been "major departures from the old way of doing things," 80 per cent said Yes. At the end of the decade, only 54 per cent said there had been.

The commitment of institutions and their students to improving society has declined slightly, in the opinion of faculty members.

Mr. Anderson said he found it reassuring that the study indicated that an institution's success, as reflected in faculty opinion, was not inalterably bound to its financial condition.

"It is foolish to assert that finance has no effect on successful college functioning," he said. "Surely it does. What these data do indicate is that within the ranges of financial variation that occurred at these 93 colleges and universities, other things like leadership style appear to be more important."

Faculty Members Assess a Decade's Changes


Percentage of faculty members agreeing with these statements:
1970 †
1980 ‡
Most faculty members are quite sensitive to the needs, interests, and aspirations of undergraduates.
84%
90%
There are remedial programs here for students with educational deficiencies.
72%
88%
The college works at maintaining fairly close relationships with business and industry in the area.
64%
76%
Faculty members, in general, are strongly committed to the acknowledged purposes of the college.
78%
72%
Serious consideration is given to student opinion in decisions affecting students.
75%
66%
In the past few years, there have been major departures from the old ways of doing things.
80%
54%
The college has programs directly concerned with solving pressing social problems.
64%
52%
In general, faculty morale is high.
61%
51%
Promotion and tenure decisions are based primarily on estimates of faculty members' effectiveness in teaching.
48%
50%
Curricular changes are decided more on the basis of finances than on educational merit.
43%
49%
A concept of 'shared authority,' by which faculty members and administrators arrive at decisions jointly, describes fairly well the college's system of governance.
64%
44%
There is wide involvement of faculty members in important decisions about running the college.
53%
36%

† Based on responses in the late 1960's and early 1970's of about 6,900 faculty members at 93 institutions.

‡ Based on responses in 1980-81 of about 5,100 faculty members at the same 93 institutions included in the earlier survey.

CHRONICLE CHART BY PETER H. STAFFORD

SOURCE: INSTITUTE OF HIGHER EDUCATION, TEACHERS COLLEGE, COLUMBIA UNIVERSITY

The chart above shows responses to some of the 132 items in a survey of what faculty members thought of their institutions in 1970 and 1980.

A College's 'Sense of Purpose' Leads to Success

Doane College, a small, church-related, liberal-arts college in Crete, Neb., was cited in a study by the Institute of Higher Education of Teachers College of Columbia University as an example of an institution that is far more successful than one might expect.

Doane's enrollment peaked at 750 in the early 1970's and declined to 689 in 1980. The college increased the amount it spent per student from $1,500 to $4,170, but much of the money went into coping with inflation, higher utility bills, debt service, and other uncontrollable costs. The purchasing power of faculty salaries dropped 20 per cent.

"What is different about Doane," says Richard E. Anderson, director of the Teachers College study, "is the spirit of the administration and faculty.

"They know they face difficult problems, but they are confronting them with a sense of purpose and community. And they seem to be succeeding."

In 1980, faculty members gave the college higher ratings on every measure on the survey than they had given in 1970. Sharp increases were noted in faculty morale, in democratic governance, in concern for innovation and undergraduate learning, and in faculty confidence in the administration.

The administration at Doane College, Mr. Anderson says, is "organized and systematic but requires heavy faculty involvement."

In 1968, only a handful of professors at Doane said they knew about long-range planning, Mr. Anderson says. But by 1980, "every faculty member was aware of the planning activities, and most felt they were very involved in the process." —J.M.

U. of Washington Plans to Drop 24 Degree Programs

By BARRY MITZMAN

The University of Washington has announced plans to eliminate 24 degree programs and reduce its enrollment by nearly 5,000 over the next three years.

The announcement gave the first clear indication of how and where university administrators will wield the ax in response to a 7-per-cent cut in state appropriations ordered earlier this year.

President William P. Gerberding said the university must permanently reduce its size and scope in order to maintain the excellence of the programs that remain.

"The damage has been as contained as possible," Mr. Gerberding said.

Plans call for eliminating degree programs in urban planning, Near Eastern languages, kinesiology, nutrition, children's drama, textiles, art education, business education, music education, and dance, among others.

Fewer students will be admitted to professional programs in dentistry, medicine, education, social work, architecture, and public administration.

Total university enrollment will decline from over 33,000 students to about 28,500.

Although some 30 tenured positions will be eliminated, attrition and reassignment are expected to avoid layoffs of tenured faculty members, according to the provost, George M. Beckmann.

However, an undetermined number of untenured members of the faculty and staff will be dismissed, he said.

"In 18 years, this is my worst moment," Mr. Beckmann said in announcing the cuts, which are expected to total $13.8-million.

The proposals will be reviewed by faculty committees over the next five months. But unless other savings are found, the programs chosen for elimination are doomed.

UNIVERSITY OF WASHINGTON

George M. Beckmann

"It's like the Japanese legal system," said Mr. Beckmann, an Asian scholar. "They are guilty until proven innocent."

The cutback plan was developed after state legislators voted to trim $21-million from the $295-million that they originally appropriated for the university's operations in the 1981-83 biennium.

Lawmakers acted to avoid a state budget deficit, due to Washington's faltering timber-based economy.

Some legislators criticized the university's announcement of program cuts just four days before the November elections.

"The timing is phenomenal," said the state's House Majority Leader, Gary A. Nelson, terming the announcement "a political-football routine."

Faculty response to the cuts was muted, as the action had been expected for some time.

But disputes over where the cuts should come have led to some animosity, said James D. West, chairman of the faculty senate.

"I preside over a bitterly divided faculty," Mr. West said.

job of the dean of college life and development.

The dean, Cathy Addy, resigned together with her secretary and the director of housing after the job was redefined. She said she had been demoted. Mr. St. Pierre had put Ms. Addy and the other two officials on probation for "wrongful usage of college properties."

The board of trustees has agreed to meet with the faculty and personnel associations to "open up lines of communication," a college spokesman said.

Students Question Rehiring of Oklahoma's Banowsky

A group of students at the University of Oklahoma presented a petition to the institution's regents last week objecting to the manner in which President William S. Banowsky was recently rehired.

Mr. Banowsky left the Oklahoma presidency on September 1 to become director of the Greater Los Angeles Chamber of Commerce, but asked for his old job back last month. The board voted unanimously to rehire him, and he returned to his duties last week.

The petition, signed by 400 students, charged that the appointment was not included on the agenda of the regents' meeting at which the decision was made.

The regents said state open-meeting laws and affirmative-action guidelines were followed.

Seton Hall Faculty Union Affiliates with AFT

Faculty members at Seton Hall University, who have been represented by an independent union, have voted 173 to 126 to affiliate with the American Federation of Teachers (A.F.L.-C.I.O.).

The union cannot be certified as the exclusive faculty representative until the National Labor Relations Board rules on a university claim that faculty members are managers and therefore not entitled to bargain collectively under the National Labor Relations Act.

Before the vote, the university ended 10 years of bargaining with the independent union, which has never been a certified representative. The university cited the Supreme Court's *Yeshiva* decision.

A regional office of the N.L.R.B. has refused a faculty request to halt hearings on the university's claim and let the A.F.T. affiliate negotiate without the protection of federal labor law.

National Enrollment Survey a Victim of Budget Cuts

A national survey of college enrollment, conducted every fall for the past 62 years, has fallen victim this year to budget cutting at the University of Alabama.

J. Ernest Mickler, assistant vice-president for planning and operations at the university, says the 1982 survey was canceled because of severe budget problems.

Mr. Mickler directed the survey for the previous three years, taking over from Garland G. Parker, now retired, who was then executive director of the office of enrollment policy and educational research at the University of Cincinnati. Mr. Parker directed the enrollment survey for 19 years. Before that, the University of Cincinnati's longtime president, the late Raymond Walters, directed it for 40 years.

Corrections

▶ An article in *The Chronicle*, September 8, identified David E. E. Sloane as the editor of the annual journal *Essays in Arts and Sciences*. The editors of the journal are Bruce Tyndall and Douglas Robillard, both of the University of New Haven. Mr. Sloane served as a guest editor for a special issue devoted to nineteenth-century American industry and culture.

▶ Following are corrections of data on tuition and fees that appeared in *The Chronicle*, August 4:

	1981-82	1982-83	
	Tuition and fees	Tuition and fees	Added out-of-state tuition
INDIANA			
Tri-State U	$3,360	$3,744	
KANSAS			
Ft Hays St U	$ 795	$ 833	$ 833
OHIO			
Cuyahoga CC	$ 720	$ 720	$ 765

Set Own Rules for Commercial Relations, Universities Urged

WASHINGTON

Instead of abiding by a uniform national policy, universities should develop their own guidelines to prevent commercial interests from subverting free academic inquiry, according to the the Association of American Universities.

In a report sent to Congress, the association said it planned to serve as a "clearinghouse" of information to aid universities and industries in developing policies to govern their commercial relationships.

But it would not, the A.A.U. said, "promulgate a code of ethics to guide the behavior of institutions and their faculties."

The association undertook a study of the issue early this year at the request of Rep. Don Fuqua, Democrat of Florida and chairman of the House Science and Technology Committee, and Rep. Albert Gore, Jr., Democrat of Tennessee and chairman of the committee's Subcommittee on Investigations and Oversight.

Both Congressmen said they were concerned that the increased involvement of industry in university research projects might skew research priorities toward commercial goals, increase secrecy among researchers, and affect the ability of universities to provide unbiased advice on policy issues.

'Thoughtful Discussion'

In its report to Mr. Fuqua and Mr. Gore, the association concluded that it was "unlikely" that universities received more than 5 per cent of their research support from industry or that the percentage would increase substantially in the future.

Although the report acknowledged that ethical issues might arise concerning the relationships between industry and academe, and although individuals or institutions might on occasion act "unwisely or improperly," it said that "the conditions exist for intelligent and thoughtful decision making on these issues at the level of individual institutions."

"We were very reluctant to state a firm policy" that would govern universities across the country, said Robert M. Rosenzweig, vice-president for public affairs at Stanford University and president-elect of the association, in an interview last week. He headed the panel that prepared the report.

"For example," he said, "Stanford doesn't have a policy that prohibits faculty members from serving as executive officers of corporations, but M.I.T. and Harvard do."

It's not that "they're right and we're wrong," he added, but that Stanford employs different safeguards to prevent faculty members from being diverted from their teaching and research by their business interests.

The association's report suggests a number of principles that would "yield sound policy" for institutions developing guidelines for commercial relationships.

It encourages openness in research, recommends that the education of graduate students and postdoctoral fellows take precedence over commercial obligations, and says that the choice of deciding research priorities should rest with the faculty members who conduct the research.

It also says that faculty members should view research and teaching as their primary obligation and that university policies should "protect the role of the institution's officers and faculty as credible and impartial resources in debates on educational, scientific, and technological policy."

—KIM McDONALD

Notes on . . . Computers

Students of fashion design and the humanities, as well as those in business, science, and engineering, will be using personal computers at Drexel University.

Starting next fall, all freshmen, regardless of discipline, will be required to purchase microcomputers, which the university will buy at a volume discount.

"We also plan for the faculty to have the same computers," said Drexel's president, William W. Hagerty. "Virtually everybody I know on the faculty is ready and eager to get going on the project."

"We are not trying to force a curriculum through a computer," said Bernard P. Sagik, vice-president for academic affairs, "but everyone involved, including the humanities people, already sees useful roles for the computers in their courses."

▪

PLATO gets personal, with courses from the big, computerized learning system redesigned for use on small, personal computers—the Apple II Plus, the Texas Instruments 99/4A, and the Atari 800.

The development of PLATO, an acronym for Programmed Logic for Automatic Teaching Operations, began nearly 20 years ago at the University of Illinois. It uses a big, central computer system connected to remote terminals.

Control Data Corporation, which operates PLATO, has announced that it is starting to translate PLATO's instructional programs into language that can be handled by the newer microcomputers.

▪

Students of Chaucer will have the help of a computerized bibliography when two scholars at the Virginia Polytechnic Institute and State University finish their work. Anthony Colaianne and Michael Piersol, assistant professors of English, are working on a bibliography of more than 10,500 citations of Chaucerian studies published since 1900.

▪

A chip factory, under construction at the University of California at Berkeley, will provide a $4.3-million laboratory for faculty members and graduate students exploring new ways to cram up to a million microscopic electronic elements onto each fingernail-sized chip of silicon.

▪

Medicine and computers are mixed together in Stanford University's new program offering doctoral and master's degrees in "medical information sciences." The program is designed for physicians interested in computers and for computer scientists interested in medical applications of computers.

▪

Dartmouth College, one of the pioneers in using computers for instruction, has become a participating member of EDUNET, making the facilities and programs of the college's Kiewit Computation Center available to all other members of the nonprofit computing network for higher education. —JACK MAGARRELL

BEST AVAILABLE COPY

Quality of Graduate Programs Rated in 9 Humanities Disciplines

By MALCOLM G. SCULLY

WASHINGTON

Ivy League universities and major public institutions such as the University of California at Berkeley and the University of Michigan have consistently high rankings in an assessment of 522 doctoral programs in nine disciplines in the humanities published here by the National Academy Press.

The report is the second of five to be published as the result of a national study of the quality of graduate education in the United States. The first—on mathematics and the physical sciences—was published in September (*The Chronicle*, September 29).

Still to come are reports on engineering, the biological sciences, and the behavioral and social sciences.

In all, the reports will cover 26 disciplines.

The study was conducted by a committee named by the Conference Board of Associated Research Councils, which comprises the American Council of Learned Societies, the American Council on Education, the National Research Council, and the Social Science Research Council.

The nine disciplines studied in the humanities are art history, classics, English, French, German, linguistics, music, philosophy, and Spanish.

The assessment included 12 measures "related to quality," ranging from the size of an institution's faculty to the success of its graduates in finding jobs.

Four were based on a survey of the reputations of the doctoral programs. Faculty members were asked to rate:

▶ The scholarly competence and achievements of the faculty members in a stratified random sample of the departments in their field.

▶ The effectiveness of those departments in educating research scholars and scientists.

▶ The improvement of the programs over the past five years.

They were also asked to indicate how familiar they were with the programs being rated. The committee noted in its report that the "evaluators, on the average, were unfamiliar with almost one-fifth of the programs they were asked to consider.

"As might be expected, the smaller and less prestigious programs were not as well known, and for this reason one might have less confidence in the average ratings of these programs."

The results of the ratings were presented in both raw scores and in standardized scores showing how far above or below the mean of 50 each program was ranked.

Generally, the traditionally well-regarded public and private universities fared well in the ratings.

On the rating of the scholarly competence of faculty members, for instance, the University of California at Berkeley had a standardized score of 60 or higher in each of the nine disciplines.

Princeton and Yale Universities had scores of 60 or higher in seven of the nine, Columbia and Cornell Universities and the University of Michigan in six, and the University of California at Los Angeles, Harvard University, and the University of Pennsylvania in five.

In general, those institutions were the same ones that had been highly rated on earlier surveys of faculty quality. However, the ratings of programs that had improved in quality over the last five years identified some less frequently mentioned institutions.

By that measure, in eight of the nine disciplines at least one institution had a standardized score of 70 or better. They were:

ART HISTORY: the Johns Hopkins University.

ENGLISH: the University of California at Irvine, the University of Delaware, the University of Pennsylvania, and Texas A&M University.

FRENCH: Princeton University and the University of Virginia.

GERMAN: Cornell University, Princeton, the State University of New York at Albany, and Virginia.

LINGUISTICS: the University of Arizona.

MUSIC: Pennsylvania and the University of Rochester.

PHILOSOPHY: Arizona, Florida State University, Rice University, the University of Southern California, and Syracuse University.

SPANISH: Virginia.

While members of the committee said they recognized that readers of their reports would make comparisons among institutions, they emphasized throughout that no one measure could be taken as the definitive indicator of quality.

In an interview after the first report was published, Lyle V. Jones, director of the psychometric laboratory at the University of North Carolina at Chapel Hill and co-chairman of the committee, said, "By providing a number of measures, many of which are related to quality, we're hoping pragmatically that no one measure will be taken as the answer."

The ratings of the humanities programs do not include two measures of research support for specific degree programs or two measures of the publication records of faculty members in those programs.

Such information was included in the report on the mathematical and physical sciences and will be included in subsequent reports on the biological sciences, engineering, and the social sciences.

They were not included in the humanities, the committee's report says, because "comparable information for humanities programs are either unavailable or, in the committee's judgment, not relevant to an assessment of humanities programs."

Copies of the report, *An Assessment of Research-Doctorate Programs in the United States: Humanities*, are available at $10.50 each from the National Academy Press, 2101 Constitution Avenue, N.W., Washington 20036.

Members of Panel on Research Programs

Following are the members of the Committee on an Assessment of Quality-Related Characteristics of Research-Doctorate Programs in the United States:

Lyle V. Jones, director, L. L. Thurstone Psychometric Laboratory, University of North Carolina at Chapel Hill, *co-chairman*.
Gardner Lindzey, director, Center for Advanced Study in the Behavioral Sciences, Stanford, Cal., *co-chairman*.
Paul A. Albrecht, vice-president and dean, Claremont Graduate School.
Marcus Alexis, professor of economics, Northwestern University.
Robert M. Bock, dean, graduate school, University of Wisconsin at Madison.
Philip E. Converse, Institute for Social Research, University of Michigan at Ann Arbor.
James H. M. Henderson, professor of plant physiology, Tuskegee Institute.
Ernest S. Kuh, professor of electrical engineering and computer sciences, University of California at Berkeley.
Winfred P. Lehmann, professor of linguistics, University of Texas at Austin.
Saunders MacLane, professor of mathematics, University of Chicago.
Nancy S. Milburn, dean, college of liberal arts and Jackson College for Women, Tufts University.
Lincoln E. Moses, professor of statistics, Stanford University.
James C. Olson, president, University of Missouri.
C. K. N. Patel, director, Physical Research Laboratory, Bell Laboratories.
Michael J. Pelczar, Jr., president, Council of Graduate Schools in the United States.
Jerome B. Schneewind, professor of philosophy, the Johns Hopkins University.
Duane C. Spriestersbach, vice-president for educational development and research, University of Iowa.
Harriet A. Zuckerman, professor of sociology, Columbia University.

Microcomputers Expected to Bring Radical Changes in Testing

By LAWRENCE BIEMILLER

NEW YORK

Microcomputers will alter standardized admissions and placement tests radically in the next few years, speakers at the Educational Testing Service's annual invitational conference said.

They predicted that within 10 years:

▶ Students would take the Scholastic Aptitude Test and other examinations individually, using microcomputers at their high schools or colleges, rather than in large groups at times set by the E.T.S.

▶ Computerized tests would be "interactive" with the student—asking ever more challenging questions until he begins to give incorrect answers.

▶ Computer programs would not only rank a student in relation to others in his class but would analyze his strengths and weaknesses and, if necessary, begin remedial instruction on the spot.

Interactive tests, psychometricians here said, are considerably more efficient than paper-and-pencil versions now offered by the E.T.S. and other test manufacturers.

"After every item, the computer estimates the candidate's test score, based on the information so far, and selects as the next item one that will give the most additional information about the person's score," explained Bert F. Green, Jr., a professor of psychology at the Johns Hopkins University.

Because interactive tests do not waste time with items that are either too simple or too difficult for the student, as a conventional version must do to accommodate all those being tested, they can be completed in about half the time.

"We don't learn anything when a student answers correctly an item that was too easy for him, or answers incorrectly an item that was too hard," said Ernest J. Anastasio, vice-president for research management at the testing service, in an interview. "The point is to converge as rapidly as possible on the student's range of ability."

The Educational Testing Service, the country's most prominent test manufacturer, already offers a computerized career-counseling service called System for Interactive Guidance Information, or SIGI. Interactive versions of various E.T.S. tests are now being developed, and an interactive basic-skills test for use by college placement officials—the first large-scale E.T.S. test to be computerized—is expected to be to be available in the fall of 1984.

Other Advantages

A number of standardized tests used in fields outside of education would also be affected by advances in microcomputer technology.

For example, Mr. Anastasio said, the Armed Services Vocational Aptitude Battery, a standardized test administered to military recruits, now requires about eight hours—often over two days—to administer to each of the 1.2 million people who take it each year. Cutting the time in half would save the Defense Department a considerable amount of money, he said.

Computerized testing, Mr. Green said, would offer several other advantages:

▶ The student would work at his own pace.

▶ Answer sheets—and the possibility that a student might mistakenly fill in the wrong blank—would be eliminated.

▶ Incorporating videodisc players into microcomputer systems would make it possible to include action sequences in tests. This would make them less dependent on narrative passages that place an emphasis on reading ability even when other skills are being tested—as is the case, for example, with examinations for fire fighters or police officers.

▶ It would be possible to score tests instantly.

It would also be possible—as the sophistication of computer programs for tests increased—to eliminate multiple-choice questions in favor of items requiring "constructed responses"—answers consisting of numbers or words typed into the computer. This is important, said Mr. Anastasio, because "selecting the right response from among five is a very different behavior from actually working out and writing down an answer."

The psychometric methodology on which interactive testing is based has been understood for some time, Mr. Anastasio said, but test manufacturers have been obliged to wait until microcomputers became available at a reasonable price.

Mr. Green said it would be necessary to create computer programs that would be able, in choosing which questions to ask the student, to select items on the basis of both difficulty and variety of content. Programs must be created, he said, to assemble tests that are as well balanced as those produced by an experienced test editor.

Mr. Green also warned that "large amounts of data" would be needed to insure that items are properly "calibrated"—or given weights in the scoring process that correspond exactly to their difficulty. Furthermore, interactive tests require a much larger bank of items on which to draw than do conventional examinations.

After such technical problems are overcome, Mr. Green and others here predicted, it will be possible to integrate standardized testing in high-school and college curricula, making it a far more useful tool than it has been to date.

W. James Popham, a professor in the Graduate School of Education at the University of California at Los Angeles, told conference participants to "take advantage of the new situation" and create tests that will "serve as instructional catalysts." Microcomputers, said psychometricians here, will allow such tests to be administered as often as necessary—rather than once or twice in a student's career, as is now generally the case.

FACT-FILE

Evaluations of 522 Programs in the Humanities

WASHINGTON

Following are evaluations of 522 doctoral programs in art history, classics, English, French, German, linguistics, music, philosophy, and Spanish, based on a survey conducted in April, 1981, by a committee of the Conference Board of Associated Research Councils. The board includes representatives of the American Council of Learned Societies, the American Council on Education, the Social Science Research Council, and the National Research Council.

Art History

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
Boston U.	49	48	64	52
Brown U.	54	55	55	54
Bryn Mawr C.	57	61	24	59
U. of California				
Berkeley	64	61	47	64
Los Angeles	54	53	58	56
Case Western Reserve U.	40	39	39	41
U. of Chicago	53	54	37	54
Columbia U.	63	66	43	66
Cornell U.	52	53	45	48
U. of Delaware	50	53	67	51
Florida St. U.*	37	37	50	43
U. of Georgia	39	37	59	37
Harvard U.	69	68	41	68
Indiana U.	52	51	53	53
U. of Iowa	47	45	51	49
Johns Hopkins U.	58	57	73	59
U. of Kansas	45	48	50	43
U. of Maryland	49	48	52	49
U. of Michigan	58	60	48	59
U. of Minnesota	47	47	47	45
U. of Missouri	38	37	28	38
U. of New Mexico*	39	40	48	37
New York U.	70	69	51	69
U. of North Carolina	53	53	68	53
Northwestern U.*	48	48	60	52
Ohio U.	29	31	n.a.	30
Ohio St. U.*	42	42	50	43
U. of Oregon	39	39	60	37
U. of Pennsylvania	57	58	58	58
Pennsylvania St. U.	47	47	41	47
U. of Pittsburgh	53	52	48	50
Princeton U.	66	65	53	66
Rutgers U.	48	48	59	49
U. of Southern California*	31	31	45	34
Stanford U.	59	60	48	57
U. of Texas, Austin*	45	44	58	44
U. of Virginia	50	50	53	52
Washington U. (Mo.)	45	43	38	42
U. of Washington	40	40	45	35
U. of Wisconsin, Madison	41	45	39	42
Yale U.	68	68	48	67

Classics

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
Boston U.*	44	40	42	53
Brown U.	59	57	63	62
Bryn Mawr C.	59	62	47	57
U. of California				
Berkeley	67	66	62	64
Los Angeles	52	47	66	53
Catholic U.	35	39	41	27
U. of Chicago	57	51	45	54
U. of Cincinnati	50	53	30	47
Columbia U.	58	57	54	56
Cornell U.	56	57	54	55
Duke U.	49	53	58	51
Fordham U.	34	33	40	35
Harvard U.	70	70	45	67
U. of Illinois	53	58	57	53
Indiana U.	48	51	52	51
U. of Iowa	40	42	52	39
Johns Hopkins U.	46	42	18	54
Loyola U. of Chicago	36	34	59	34
U. of Michigan	61	63	57	62
U. of Minnesota	44	46	56	45
U. of Missouri	36	39	43	37
New York U.	42	36	33	44
U. of North Carolina	60	63	49	59
Ohio St. U.	47	48	54	51
U. of Pennsylvania	57	56	48	56
Princeton U.	62	63	58	63
Rutgers U.	39	37	52	42
St. U. of New York, Buffalo	47	47	41	44
Stanford U.	55	56	40	54
U. of Texas, Austin	58	58	67	60
Tulane U.	48	48	38	45
U. of Tulsa	38	37	62	45
U. of Utah	41	42	63	37
Vanderbilt U.	51	52	56	50
U. of Virginia	70	67	63	71
Washington U. (Mo.)	51	53	42	50
U. of Washington	58	59	60	56
Washington St. U.	39	39	48	37
Wayne St. U.	46	46	44	43
U. of Wisconsin				
Madison	60	61	40	60
Milwaukee	52	53	59	52
Yale U.	73	71	46	73

Note Ratings are standardized on a scale where 50 represents the average score for all rated departments.
(a) Rating of scholarly quality of faculty members in the program.
(b) Rating of the effectiveness of the program in education of research scholars or scientists.
(c) Rating of improvement in program quality in the last five years.
(d) Rating of the evaluators' familiarity with the work of program faculty.
* Program was initiated after 1970.
n.a. Not available.

English

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
American U.	36	34	39	39
U. of Arizona	46	48	66	43
Arizona St. U.	43	44	65	43
U. of Arkansas	40	41	56	41
Auburn U.	36	34	50	37
Ball St. U.	38	37	58	58
Boston C.	42	38	50	42
Boston U.	53	48	52	53
Bowling Green St. U.	39	40	58	39
Brandeis U.	49	52	37	46
Brown U.	64	63	57	64
Bryn Mawr C.	41	44	37	40
City U. of New York				
Graduate Sch.	63	59	59	60
U. of California				
Berkeley	71	70	45	70
Davis	51	49	61	52
Irvine	57	57	71	58
Los Angeles	64	63	62	65
Riverside	48	47	41	48
San Diego	56	55	52	55
Santa Barbara	54	50	46	53
Case Western Reserve U.	41	39	34	42
Catholic U.	32	33	32	37
U. of Chicago	68	67	52	68
Claremont Graduate Sch.	50	55	33	45
U. of Colorado	50	52	52	48
Columbia U.	68	64	54	68
U. of Connecticut	47	47	42	45
Cornell U.	67	69	62	67
U. of Delaware	48	47	70	47
U. of Denver	37	37	47	37
Duke U.	57	57	44	52
Emory U.	52	55	53	50
U. of Florida	47	47	57	48
Florida St. U.	39	38	42	38
Fordham U.	42	44	28	39
U. of Georgia	42	43	44	43
Georgia St. U.	31	31	n.a.	37
Harvard U.	69	68	39	72
U. of Illinois	58	59	39	58
Indiana U.	60	62	54	63
U. of Iowa	57	62	51	59
Johns Hopkins U.	67	67	41	68
U. of Kansas	49	50	43	45
Kansas St. U.	37	36	n.a.	36
Kent St. U.	42	39	40	42
U. of Kentucky	49	48	58	50
Lehigh U.	39	42	52	39
Louisiana St. U.	47	47	46	46
Loyola U. of Chicago	39	40	44	41
Marquette U.	42	40	44	43
U. of Maryland	56	56	69	57
U. of Massachusetts	54	55	55	53
U. of Michigan	61	63	45	62
Michigan St. U.	54	54	48	51
U. of Minnesota	52	54	30	48
U. of Mississippi	38	38	42	37
U. of Missouri	46	46	48	41
U. of Nebraska	49	49	39	46
U. of New Mexico	43	44	53	47
New York U.	60	58	63	60
U. of North Carolina	60	60	54	61
U. of North Dakota	33	30	n.a.	34
N. Illinois U.	38	38	45	37
Northwestern U.	60	60	57	61
U. of Notre Dame	44	46	34	47
Ohio U.	40	40	33	38
Ohio St. U.	54	54	42	55
U. of Oklahoma	44	44	52	44
Oklahoma St. U.	34	35	45	37
U. of Oregon	48	48	45	46
U. of Pennsylvania	64	63	70	66
Pennsylvania St. U.	53	55	52	53
U. of Pittsburgh	45	46	45	45
Princeton U.	67	67	50	67
Purdue U.	48	48	45	45
U. of Rhode Island	38	36	n.a.	37
Rice U.	51	51	42	50
U. of Rochester	55	56	48	55
Rutgers U.	62	60	66	64
St. U. of New York				
Binghamton	51	51	50	52
Buffalo	60	58	49	61
Stony Brook	58	58	58	58
Saint Louis U.	46	46	41	48
U. of South Carolina	54	53	61	53
U. of Southern California	55	54	67	58
S. Illinois U., Carbondale	43	41	42	47
Stanford U.	66	66	55	67
Syracuse U.	46	46	43	48
Temple U.	47	45	45	47
U. of Tennessee	49	49	59	46
U. of Texas, Austin	59	60	63	59
Texas A&M U.	42	41	72	40
Texas Tech U.	34	36	52	38
Tufts U.	46	52	44	47

French

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
U. of Arizona	39	40	52	38
Boston C.	40	40	48	38
Boston U.	36	31	50	36
Brown U.	51	57	54	50
Bryn Mawr C.	49	52	42	48
City U. of New York				
Graduate Sch.	62	60	55	60
U. of California				
Berkeley	61	59	59	62
Davis	53	51	61	49
Irvine	56	55	62	58
Los Angeles	48	50	36	49
Santa Barbara	53	53	56	55
Case Western Reserve U.	33	34	23	38
Catholic U.	34	37	38	34
U. of Chicago	56	56	43	53
U. of Colorado	38	40	41	38
Columbia U.	70	65	51	71
U. of Connecticut	40	42	54	38
Cornell U.	60	63	51	59
Duke U.	56	57	57	56
Emory U.	33	32	33	38
Florida St. U.	32	31	46	32
Fordham U.	42	43	41	44
Harvard U.	56	51	50	64
U. of Illinois	60	59	57	57
Indiana U.	60	63	53	59
U. of Iowa	46	46	60	42
Johns Hopkins U.	49	51	16	61
U. of Kansas	46	48	44	45
U. of Kentucky	49	48	44	54
U. of Maryland	43	41	56	42
U. of Massachusetts	47	47	56	47
U. of Michigan	61	60	50	61
Michigan St. U.	46	45	46	48
U. of Minnesota	47	48	56	44
U. of Missouri	36	37	56	37
U. of Nebraska	32	29	53	38
New York U.	66	66	64	67
U. of North Carolina	54	57	41	56
Northwestern U.	47	48	43	45
Ohio St. U.	50	50	44	50
U. of Oregon	44	42	54	42
U. of Pennsylvania	61	60	57	63
Pennsylvania St. U.	50	53	55	51
U. of Pittsburgh	48	46	50	48
Princeton U.	73	71	71	72
Rice U.	48	51	55	50
Rutgers U.	50	48	66	51
St. U. of New York, Buffalo	53	52	41	51
U. of Southern California	39	35	47	44
Stanford U.	59	61	58	57
U. of Texas, Austin	53	55	50	50
Tulane U.	44	46	51	39
Vanderbilt U.	51	51	48	44
U. of Virginia	62	59	72	63
Washington U. (Mo.)	47	49	41	43
U. of Washington	47	50	53	41
U. of Wisconsin, Madison	56	59	36	56
Yale U.	74	74	53	73

German

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
Brown U.	51	52	54	51
Bryn Mawr C.	40	38	53	41
City U. of New York				
Graduate Sch.	45	41	41	42
U. of California				
Berkeley	65	64	49	64
Davis	43	44	49	44
Irvine	51	51	53	54
Los Angeles	57	57	58	51
San Diego	40	35	42	42
Santa Barbara	55	51	57	55
U. of Chicago	47	48	33	43
U. of Cincinnati	47	49	46	48
U. of Colorado	35	35	25	40
U. of Connecticut	44	46	49	47
Cornell U.	63	60	74	60
Harvard U.	59	57	36	63

Continued on Following Page

FACT-FILE—Continued

German

Continued

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
U. of Illinois	57	58	52	52
Indiana U.	65	65	54	64
U. of Iowa	36	35	50	36
Johns Hopkins U.	48	51	41	48
U. of Kansas	41	43	46	41
U. of Massachusetts	57	58	54	59
U. of Michigan	56	57	52	52
U. of Minnesota	51	54	60	52
U. of Nebraska	35	35	49	35
New York U.	47	47	45	43
U. of North Carolina	52	54	53	52
Northwestern U.	54	51	45	56
Ohio St. U.	53	56	49	53
U. of Oregon	45	47	53	41
U. of Pennsylvania	55	55	44	55
Pennsylvania St. U.	43	44	51	43
U. of Pittsburgh	42	39	43	44
Princeton U.	67	66	71	67
Rice U.	39	41	45	40
Rutgers U.	38	40	45	40
St. U. of New York				
Albany	53	50	71	56
Buffalo	48	45	48	47
Stony Brook	38	38	41	38
U. of Southern California	38	41	31	39
Stanford U.	63	64	64	62
U. of Tennessee	31	31	40	32
U. of Texas, Austin	63	65	54	62
Vanderbilt U.	33	36	44	29
U. of Virginia	62	59	74	65
Washington U. (Mo.)	55	55	44	58
U. of Washington	57	57	54	54
U. of Wisconsin, Madison	67	67	62	69
Yale U.	67	66	52	67

Linguistics

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
U. of Arizona*	50	51	70	53
Brown U.	48	48	56	49
City U. of New York				
Graduate Sch.*	52	51	48	52
U. of California				
Berkeley	61	58	41	65
Los Angeles	66	65	50	64
San Diego	60	60	53	63
U. of Chicago	62	61	47	59
U. of Connecticut	50	55	60	49
Cornell U.	50	51	53	50
U. of Florida*	32	32	n.a.	30
Georgetown U.	46	49	43	49
Harvard U.	55	54	41	55
U. of Hawaii	52	53	52	47
U. of Illinois	57	60	51	56
Indiana U.	48	49	34	55
U. of Kansas	42	43	52	38
Massachusetts Institute of Technology	69	67	44	67
U. of Massachusetts	60	64	65	59
U. of Michigan	48	49	33	50
U. of Minnesota	44	41	51	46
New York U.	43	43	59	43
U. of North Carolina	32	32	27	34
Northern Illinois U.	24	24	n.a.	27
Northwestern U.	41	42	50	37
Ohio St. U.	57	58	47	57
U. of Pennsylvania	61	57	56	58
U. of Pittsburgh	41	39	51	39
U. of Rochester	36	34	32	32
St. U. of New York, Buffalo	43	43	41	47
U. of Southern California	52	52	69	52
Stanford U.	58	58	61	59
U. of Texas, Austin	63	61	55	60
U. of Washington	51	53	57	55
U. of Wisconsin, Madison	45	44	54	44
Yale U.	52	46	46	53

Music

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
Ball St. U.*	39	40	57	39
Boston U.	46	43	52	44
Brandeis U.	58	56	39	51
City U. of New York				
Graduate Sch.	62	59	55	58

Note: Ratings are standardized on a scale where 50 represents the average score for all rated departments.
(a) Rating of scholarly quality of faculty members in the program.
(b) Rating of the effectiveness of the program in education of research scholars or scientists.
(c) Rating of improvement in program quality in the last five years.
(d) Rating of the evaluators' familiarity with the work of program faculty.
* Program was initiated after 1970.
n.a. Not available.

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
U. of California				
Berkeley	67	69	57	63
Los Angeles	60	60	54	62
San Diego*	41	42	51	39
Santa Barbara	48	48	62	49
Case Western Reserve U.	41	42	43	44
Catholic U.	42	41	43	45
U. of Chicago	67	68	49	58
U. of Cincinnati	43	43	47	41
U. of Colorado	42	42	47	40
Columbia U.	61	63	40	57
Cornell U.	62	64	50	58
Florida St. U.	47	49	65	49
U. of Illinois	63	62	53	67
Indiana U.	59	58	51	66
U. of Iowa	52	54	47	53
Johns Hopkins U.				
Peabody Inst.	44	44	50	40
Juilliard Sch.	51	45	44	58
U. of Kansas	45	43	53	44
U. of Kentucky	41	40	43	44
Louisiana St. U.	30	32	n.a.	32
U. of Maryland	48	49	57	51
U. of Miami	36	37	n.a.	38
U. of Michigan	62	62	50	65
Michigan St. U.	40	44	28	40
U. of Minnesota	48	48	55	40
U. of Missouri				
Kansas City	34	36	47	37
New York U.	60	60	42	57
U. of North Carolina	60	60	61	57
North Texas St. U.	50	51	60	57
Northwestern U.	52	51	57	55
Ohio St. U.	51	51	44	52
U. of Oklahoma	36	39	44	38
U. of Oregon	43	42	54	38
U. of Pennsylvania	62	61	73	62
U. of Pittsburgh	43	44	43	41
Princeton U.	67	68	30	66
U. of Rochester	58	58	60	61
Rutgers U.	53	52	39	50
St. U. of New York, Buffalo	53	48	46	51
U. of Southern California	52	52	59	49
Southwestern Baptist Theological Seminary	27	25	n.a.	27
Stanford U.	59	61	46	57
U. of Texas, Austin	54	52	55	59
Washington U. (Mo.)	40	40	30	37
U. of Washington	50	49	60	48
Wesleyan U.	49	49	34	43
West Virginia U.	39	39	60	37
U. of Wisconsin, Madison	48	46	42	55
Yale U.	66	67	50	68

Philosophy

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
U. of Arizona	61	55	71	63
Boston C.	40	47	45	33
Boston U.	56	56	56	62
Brown U.	60	62	48	63
Bryn Mawr C.	40	41	44	40
City U. of New York				
Graduate Sch.	56	50	54	58
U. of California				
Berkeley	69	65	58	66
Irvine	55	57	68	57
Los Angeles	68	66	55	65
Riverside*	38	36	44	44
San Diego	50	52	52	50
Santa Barbara	47	46	52	48
Catholic U.	49	52	53	46
U. of Chicago	67	63	64	67
U. of Cincinnati	43	39	53	40
Claremont Graduate Sch.	45	46	50	43
U. of Colorado	44	43	45	41
Columbia U.	60	59	38	61
U. of Connecticut	42	42	51	43
Cornell U.	62	63	40	63
DePaul U.	36	35	n.a.	32
Duke U.	46	43	47	45
Emory U.	41	40	45	44
Florida St. U.	46	44	78	48
Fordham U.	47	49	53	39
Georgetown U.	45	48	55	44
U. of Georgia*	36	35	49	38
Harvard U.	72	70	37	70
U. of Hawaii	41	42	52	41
U. of Illinois				
Urbana-Champaign	51	52	40	50
Chicago Circle	58	58	63	57
Indiana U.	58	59	51	58
U. of Iowa	47	51	35	45
Johns Hopkins U.	52	54	32	56
U. of Kansas	42	45	52	39
Marquette U.	40	43	50	33
Massachusetts Inst. of Tech.	64	63	58	62
U. of Massachusetts	60	62	53	60
U. of Miami	41	38	58	43
U. of Michigan	65	64	33	63
Michigan St. U.	43	44	41	41
U. of Minnesota	55	57	44	53
U. of Missouri	33	33	45	35
U. of Nebraska	42	44	58	45
New School for Social Research	30	32	22	41
U. of North Carolina	56	58	49	57
Northwestern U.	50	49	50	54
U. of Notre Dame	52	55	55	54
Ohio St. U.	52	56	51	52

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
U. of Oklahoma	38	35	57	38
U. of Oregon	37	35	42	37
U. of Pennsylvania	52	52	39	53
Pennsylvania St. U.	47	48	47	45
U. of Pittsburgh				
Philosophy	71	72	53	57
History and philosophy of science*	68	66	58	66
Princeton U.	71	73	48	68
Purdue U.	42	40	46	43
Rice U.	45	40	70	52
U. of Rochester	52	53	31	55
Rutgers U.	49	47	54	49
St. U. of New York, Buffalo	47	47	47	45
Saint Louis U.	44	46	45	37
U. of Southern California	56	55	75	54
U. of S. Illinois, Carbondale	34	33	47	36
Stanford U.	66	65	54	63
Syracuse U.	54	53	75	57
Temple U.	50	50	50	54
U. of Tennessee	35	34	54	36
U. of Texas, Austin	55	56	46	57
Tulane U.	39	44	42	41
Vanderbilt U.	46	49	49	46
U. of Virginia	44	45	49	43
Washington U. (Mo.)	49	49	43	50
U. of Washington	49	48	51	47
Wayne St. U.	42	41	37	44
U. of Wisconsin, Madison	57	56	50	55
Yale U.	57	55	45	64

Spanish

	Faculty quality (a)	Effectiveness (b)	Improvement (c)	Familiarity (d)
U. of Arizona	50	53	57	52
Arizona St. U.	45	44	64	46
Brown U.	60	61	50	56
City U. of New York				
Graduate Sch.	52	48	39	51
U. of California				
Berkeley	67	68	46	64
Davis	47	46	52	43
Irvine	55	57	61	59
Los Angeles	63	63	62	60
Riverside	48	46	47	49
San Diego	62	56	40	60
Santa Barbara	53	53	66	49
Catholic U.	42	44	42	43
U. of Cincinnati	39	39	45	48
U. of Colorado	39	39	43	37
Columbia U.	60	56	48	61
U. of Connecticut	45	45	61	48
Cornell U.	60	61	55	54
Duke U.	56	56	49	56
Emory U.	31	29	32	36
U. of Florida	39	40	34	40
Florida St. U.	37	37	41	39
Georgetown U.	42	43	44	36
U. of Georgia	46	47	63	48
Harvard U.	74	68	58	73
U. of Illinois	59	62	42	60
Indiana U.	61	61	50	62
U. of Iowa	46	48	47	45
Johns Hopkins U.	47	48	18	52
U. of Kansas	61	55	63	62
U. of Kentucky	56	58	56	61
Louisiana St. U.	38	40	66	36
U. of Maryland	53	48	61	52
U. of Massachusetts	47	50	49	47
U. of Miami	40	38	43	47
U. of Michigan	65	63	51	64
Michigan St. U.	45	46	48	49
U. of Minnesota	55	58	63	57
U. of Missouri	44	46	53	40
U. of Nebraska	41	39	60	46
U. of New Mexico	49	52	50	48
New York U.	50	51	51	47
U. of North Carolina	55	56	45	59
Northwestern U.	42	43	43	43
Ohio St. U.	41	43	32	35
U. of Oklahoma	31	28	40	30
U. of Oregon	36	36	34	31
U. of Pennsylvania	72	71	57	66
Pennsylvania St. U.	51	53	56	53
U. of Pittsburgh	57	57	46	58
Princeton U.	59	59	38	58
U. of Puerto Rico	45	45	60	31
Purdue U.	42	39	49	44
Rutgers U.	48	50	49	48
St. U. of New York				
Albany	52	44	60	50
Buffalo	53	54	57	53
U. of Southern California	42	46	45	45
Stanford U.	63	63	55	60
Syracuse U.	43	40	52	45
Temple U.*	36	41	46	32
U. of Tennessee	35	32	42	36
Texas Tech U.*	40	38	67	45
U. of Texas, Austin	69	68	52	67
Tulane U.	43	43	47	45
Vanderbilt U.	48	48	51	46
U. of Virginia	53	55	74	52
Washington U. (Mo.)	41	43	40	52
U. of Washington	52	53	46	50
U. of Wisconsin, Madison	63	65	38	66
Yale U.	68	65	54	70

SOURCE: CONFERENCE BOARD OF ASSOCIATED RESEARCH COUNCILS